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EXAMINER

KIM, PAUL

ART UNIT PAPER NUMBER

2161

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/699,203	Applicant(s) RYAN ET AL.	
	Examiner Paul Kim	Art Unit 2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,11-16,18-28 and 30-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,11-16,18-28 and 30-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the following communication: Amendment filed on 31 July 2006.

Response to Amendment

2. Claims 1-2, 4-9, 11-16, 18-28, and 30-33 are pending and present for examination.
3. Claims 3, 10, 17, and 29 have been cancelled.
4. Claims 1, 8, 15, and 27 have been amended.
5. No claims have been added.

Drawings

6. The drawings were received on 31 July 2006. These drawings are acceptable.

Claim Rejections - 35 USC § 101

7. As per the rejections of claims 22-25 under 35 USC § 101, Applicant's Argument has been acknowledged and is persuasive. Accordingly, the rejection has been withdrawn.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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9. **Claim 26** is rejected under 35 U.S.C. 102(e) as being anticipated by Sangudi et al (U.S. Patent No. 6,925,470, hereinafter referred to as SANGUDI), filed on 25 January 2002, and issued on 2 August 2005.

10. **As per independent claim 26**, SANGUDI teaches:

A method of transferring data from a markup language file having a hierarchical structure to a relational database {See SANGUDI, Abstract, wherein this reads over "a method and apparatus for representing an XML data structure as a fixed set of tables in relational database"} said method comprising:

partitioning said hierarchical structure into sections {See SANGUDI, col. 8, lines 64-66, wherein this reads over "a data model that allows XML data to be partitioned in variable-sized chunks"};

allocating a memory section for each of said sections of said hierarchical structure according to the data types of the nodes in the section {See SANGUDI, Figures 3A-C, 4A-B, 5A-C, and 6A-F};

after completing said partitioning and allocating, parsing said markup language file to produce a stream of data pairs, wherein each of said data pairs comprises an element of node data and an element of node location information, and wherein said node location information indicates the location of the corresponding node within said hierarchical structure {See SANGUDI, Figure 10};

while performing said parsing process, loading said node data into the memory section allocated for the section containing the corresponding node location as said data pairs are output from said parsing process {See SANGUDI, Figures 10, 11A-C, and 12}; and

transferring said node data from said sections to said relational database {See SANGUDI, Figure 15; col. 7, lines 54-56, wherein this reads over "a logical data model using documents, such as XML, to map to a table, for example in a relational database"; and col. 8, lines 14-19, wherein this reads over "XML unites (nodes) are exposed in the relational schema. This node order model stores the preorder traversal position of the nodes in an XML document and uses the position to reassemble the XML tree with the correct hierarchy and ordering"};

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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12. **Claims 1, 2, 5-9, 12-15, 19, 21, 27, 28 and 31-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over SANGUDI, in view of Schloss et al (U.S. Patent No. 6,249,844, hereinafter referred to as SCHLOSS), filed on 13 November 1998, and issued on 19 June 2001.
13. **As per independent claims 1, 8, 15, and 27**, SANGUDI, in combination with SCHLOSS, discloses:

A method of transferring data from a markup language file having a hierarchical structure to a relational database {See SANGUDI, Abstract, wherein this reads over "a method and apparatus for representing an XML data structure as a fixed set of tables in relational database"}, said hierarchical structure comprising a tree or forest of nodes on which depth first search imposes a total ordering, with some nodes designated as repeating nodes, and said method comprising:

partitioning said hierarchical structure into sections {See SANGUDI, col. 8, lines 64-66, wherein this reads over "a data model that allows XML data to be partitioned in variable-sized chunks"}, wherein each section is dedicated to at least one leaf node of said hierarchical structure, and wherein two non-repeating leaf nodes that are adjacent in frontier order and have the same parent are contained in the same section, frontier order being the order in which leaf nodes are encountered in a depth first search of said hierarchical structure {See SANGUDI, Figures 8-9};

allocating a memory section for each of said sections of said hierarchical structure according to the data types of the nodes in the section {See SANGUDI, Figures 3A-C, 4A-B, 5A-C, and 6A-F};

after completing said partitioning and allocating, parsing said markup language file to produce a stream of data pairs, wherein each of said data pairs comprises an element of node data and an element of node location information, and wherein said node location information indicates the location of the corresponding node within said hierarchical structure {See SANGUDI, Figure 10};

while performing said parsing process, loading said node data into the memory section allocated for the section containing the corresponding node location as said data pairs are output from said parsing process {See SANGUDI, Figures 10, 11A-C, and 12};

transferring said node data from said sections to said relational database, wherein information is transferred from one section as soon as said loading process completes loading at least one element of node data to said one memory section and an end of section indicator has been encountered by said parsing process {See SANGUDI, Figure 15; col. 7, lines 54-56, wherein this reads over "a logical data model using documents, such as XML, to map to a table, for example in a relational database"; and col. 8, lines 14-19, wherein this reads over "XML unites (nodes) are exposed in the relational schema. This node order model stores the preorder traversal position of the nodes in an XML document and uses the position to reassemble the XML tree with the correct hierarchy and ordering"}; and

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erasing said memory section {See SCHLOSS, col. 5, lines 38-41, wherein this reads over "the first segment begins with a start-tag, <cml: molecule>, and ends with an end tag, </cml: molecule>; and col. 9, lines 2-6, wherein this reads over "the fragment cache manager will be invoked to check if any of its fragment version is in the fragment cache and delete it"};

wherein a first memory section is erased only when an end of section indicator has been encountered by said parsing process {See SCHLOSS, col. 4, lines 33-37, wherein this reads over "parsing the document to recognize the segments can be done by matching each 'end-tag'"}, a new corresponding data pair is produced by said parsing process {See SANGUDI, Figure 10}, and the node data of said data pair is ready to be loaded in said first memory section {See SCHLOSS, col. 8, lines 38-40, wherein this reads over "it is check whether there is enough free space in the fragment cache to cache the requested fragment"};

The combination of the inventions disclosed in SANGUDI and SCHLOSS would disclose a method wherein the memory section is erased when an end of section (i.e. end-tag) has been encountered, and node data of the data pair is ready to be loaded in the memory section. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions suggested by SANGUDI and SCHLOSS.

One of ordinary skill in the art would have been motivated to do this modification so that the memory section may be freed of unused data.

14. **As per dependent claims 2, 9, and 28**, SANGUDI, in combination with SCHLOSS, discloses:

The method in claim 1,

wherein said partitioning said hierarchical structure into sections {See SANGUDI, col. 8, lines 64-66, wherein this reads over "a data model that allows XML data to be partitioned in variable-sized chunks"};

wherein each section is dedicated to at least one leaf node of said hierarchical structure {See SANGUDI, Figures 8-9}, and

wherein two non-repeating leaf nodes that are adjacent in frontier order and have the same parent are contained in the same section {See SANGUDI, Figures 8-9};

frontier order being the order in which leaf nodes are encountered in a depth first search of said hierarchical structure {See SANGUDI, Figures 7-9; and col. 8, lines 14-19, wherein this reads over "XML unites (nodes) are exposed in the relational schema. This node order model stores the preorder traversal position of the nodes in an XML document and uses the position to reassemble the XML tree with the correct hierarchy and ordering"};

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15. **As per dependent claims 5, 12, 19, and 31**, SANGUDI, in combination with

SCHLOSS, discloses:

The method in claim 1, wherein said node location information of said data pairs comprises leaf nodes of said hierarchical data structure {See SANGUDI, Figure 10}.

16. **As per dependent claims 6, 13, and 32**, SANGUDI, in combination with SCHLOSS,

discloses:

The method in claim 1, wherein in said partitioning process any two non-repeating leaf nodes of said hierarchical structure that are adjacent in frontier order and have the same repeating ancestors are in the same section {See SANGUDI, Figure 10}.

17. **As per dependent claims 7, 14, 21, and 33**, SANGUDI, in combination with

SCHLOSS, discloses:

The method in claim 1, wherein said parsing process relocates all data in said hierarchical structure to the leaf nodes of said hierarchical structure {See SANGUDI, Figure 10, 11A-C, and 12}.

18. **Claims 4, 11, 18, and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over SANGUDI, in view of SCHLOSS and Cox (USPGPUB No. 2002/0112224, hereinafter referred to as COX), filed on 31 January 2001, and published on 15 August 2002.

SANGUDI teaches the limitations of claims 1, 2, 5-9, 12-15, 19, 21, 26-28, and 31-33 for the reasons stated above.

SANGUDI differs from the claimed invention in that SANGUDI fails disclose a method wherein information is transferred from one section as soon as the loading process completes loading at least one element of node data to the memory section and an end section indicator has been encountered by the parsing process (claims 4, 11, 18, 30).

19. **As per dependent claims 4, 11, 18, and 30**, SANGUDI, in combination with SCHLOSS and COX, discloses:

The method in claim 1,

wherein said transferring said node data from said sections to said relational database {See SANGUDI, Figure 15; col. 7, lines 54-56, wherein this reads over "a logical data model using documents, such as XML, to map to a table, for example in a relational database"; and col. 8, lines 14-19, wherein this reads over "XML unites (nodes) are exposed in the relational schema. This node order model

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stores the preorder traversal position of the nodes in an XML document and uses the position to reassemble the XML tree with the correct hierarchy and ordering"}₄

wherein information is transferred from one section as soon as said loading process completes loading at least one element of node data to said one memory section and an end of section indicator has been encountered by said parsing process {See COX, Figure 5; and Para. 0048, wherein this reads over "the SAX XML parser allows for the first element found in the XML file to be immediately received by the Operator" and "rather than in the process currently in use where the XML parsing of the entire file is completed before the SQL command generation is even started, the processes of the present invention are executed simultaneously in parallel in the system"}₄

wherein an end of section indicator is encountered {See SCHLOSS, col. 4, lines 33-37, wherein this reads over "parsing the document to recognize the segments can be done by matching each 'end-tag'"}₂ when the parsing process produces either a node location from a different section or a node location at or preceding the last of the at least one node location in the one section in depth first search order {See SANGUDI, Figures 7 and 8; and col. 4, lines 23-24, wherein this reads over "<Employee> and </Employee> are start and closing tags respectively"}₂

The combination of the inventions disclosed in SANGUDI, SCHLOSS, and COX would disclose a method wherein information is transferred, using an SAX XML parser, from one section as soon as the loading process completes locating at least one element of node data to the memory section and an end of section indicator has been encountered. Furthermore, SCHLOSS discloses a method wherein parsing the document comprises of recognizing segment by matching segment with and end-tag. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions suggested by SANGUDI, SCHLOSS, and COX.

One of ordinary skill in the art would have been motivated to do this modification so that the XML parsing process would not have to wait for the XML parsing of the entire file to be complete before transferring data to the memory section.

20. **Claims 16 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over SANGUDI, in view of Mani et al (USPGPUB No. 2003/0212698, hereinafter referred to as MANI), filed on 9 May 2002, and published on 13 November 2003.

SANGUDI teaches the limitations of claims 1, 2, 5-9, 12-15, 19, 21, 26-28, and 31-33 for the reasons stated above.

SANGUDI differs from the claimed invention in that SANGUDI fails disclose a method wherein the partitioning is based on a document type definition file (claim 16).

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SANGUDI differs from the claimed invention in that SANGUDI fails disclose a method wherein the leaf nodes of the hierarchical structure include repeating nodes and are allocated an exclusively dedicated section (claim 20).

21. **As per dependent claim 16**, SANGUDI, in combination with MANI, discloses a method, wherein partitioning is based on a document type definition file, separate from the hierarchical file, wherein the document type definition file comprises the hierarchical structure {See MANI, Para. 0007, wherein this reads over "[t]he formal relations among elements and attributes in XML documents are governed by declarations set forth in Document Type Definitions . . . [which] is a form description in XML Declaration Syntax of a particular type of XML document . . . [setting] out what names are to be used for the different types of element, where they may occur, and how they all fit together"}.

The combination of the inventions disclosed in SANGUDI and MANI would disclose a method wherein partitioning is based on a document type definition file (DTD) that comprises of a hierarchical structure. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions suggested by SANGUDI and MANI.

One of ordinary skill in the art would have been motivated to do this modification so that the hierarchical file (i.e. an XML file) may be partitioned according to format set forth by the DTD.

22. **As per dependent claim 20**, SANGUDI, in combination with MANI, discloses a method, wherein leaf nodes of the hierarchical structure include repeating nodes {See MANI, Para. 0097, wherein this reads over " 'Repeating nodes' are nodes that represent repeating elements"} and wherein a different section is exclusively dedicated to each of the repeating nodes {See MANI, Figures 8-12; and Para. 0111, wherein this reads over "[n]odes representing elements declared with '+' or '*' that is, repeating elements, are considered 'repeating nodes,'}.

The combination of the inventions disclosed in SANGUDI and MANI would disclose a method wherein leaf nodes of the hierarchical structure include repeating nodes and wherein a different section is exclusively dedicated to each of the repeating nodes (i.e. repeating nodes are allocated node space within the tree, indicated by "+" or "*"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions suggested by SANGUDI and MANI.

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One of ordinary skill in the art would have been motivated to do this modification so that the repeating nodes may be reorganized accordingly.

Response to Arguments

23. **As per claims 1, 7, 15, and 27**, Applicant's arguments filed 31 July 2006 have been fully considered but they are moot in view of the new grounds of rejection.

Applicant's Arguments:

Applicant's Argument states the following:

- a. On page 16 of the Amendment, that "there is no implication that the cache will be deleted when an end segment indicator is met during a parsing process" and that "[n]o motivation is found in Schloss to delete a memory only after identifying an end segment because Schloss only disclose deleting fragments after reaching a specified value."

Response to Arguments:

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, there is no requirement to show motivation to combine parts within a single reference. Therefore, Applicant's Argument is considered moot

24. **As per claims 3, 10, 17, and 29**, Applicant has not asserted any specific arguments in response to the rejections of the claims. Therefore, the rejections of claims 3, 10, 17, and 29 are sustained because Applicant has not traversed the rejections nor presented any arguments for overcoming the rejections contained in the prior Office Action, dated 5 May 2006. Furthermore, by virtue

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of dependency, the rejections of Claims 3, 10, 17, and 29 are sustained under 35 U.S.C. § 103(a) for the reasons stated above in relation to Claims 1, 7, 15, and 29.

25. **As per claims 4, 11, 18 and 30**, Applicant has not asserted any specific arguments in response to the rejections of the claims. Therefore, the rejections of claims 4, 11, 18 and 30 are sustained because Applicant has not traversed the rejections nor presented any arguments for overcoming the rejections contained in the prior Office Action, dated 5 May 2006. Furthermore, by virtue of dependency, the rejections of Claims 4, 11, 18 and 30 are sustained under 35 U.S.C. § 103(a) for the reasons stated above in relation to Claims 1, 7, 15, and 27.

26. **As per claims 16 and 20**, Applicant has not asserted any specific arguments in response to the rejections of the claims. Therefore, the rejections of claims 16 and 20 are sustained because Applicant has not traversed the rejections nor presented any arguments for overcoming the rejections contained in the prior Office Action, dated 5 May 2006. Furthermore, by virtue of dependency, the rejections of Claims 16 and 20 are sustained under 35 U.S.C. § 103(a) for the reasons stated above in relation to Claims 1, 7, 15, and 27.

27. **As per claims 26**, Applicant has not asserted any specific arguments in response to the rejections of the claims. Therefore, the rejection of claim 26 are sustained because Applicant has not traversed the rejections nor presented any arguments for overcoming the rejections contained in the prior Office Action, dated 5 May 2006.

Conclusion

28. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory

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action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Kim whose telephone number is (571) 272-2737. The examiner can normally be reached on M-F, 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christian Chase can be reached on (571) 272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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